DEVICE FOR SUCKING OFF LINT ON SPINNING MACHINES

Filed Jan. 27, 1956

Fig. 7

Fig. 8

Fig. 9

Fig. 10

Fig. 11

Fig. 12

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In order to enable users to utilize the invention in connection with the various forms of draft gear employed and to manufacture the support members identical in shape and in large numbers, one part of the positive snap-type locking device, preferably the catch bolt member, is made adjustable. Adjustment is preferably effected by means of a slot which is part of a circle about a center formed by the pivot of a pivoted arm joined to a supporting arm secured to the draft gear frame. In this application, the adjustable part is preferably formed by a round head screw whose shaft extends through the slot and is clamped in position by a nut on the other side of the slotted member, preferably by interposing a washer. This arrangement is simple, inexpensive, and requires very little space.

Further details relating to this invention are given in drawings illustrating a number of examples and applications. In the drawings:

Figs. 1 and 2 show the side and the front view of an embodiment.

Figs. 3 and 4 show another embodiment,

Figs. 5 and 6 a third embodiment,

Figs. 7 and 8 a fourth embodiment,

Figs. 9 and 10 the elevational and the plan view of the pivoted arm shown in Figs. 7 and 8, and

Figs. 11 and 12 the front elevation and the side view of the supporting arm shown in Figs. 7 and 8.

Component parts are designated by numbers as follows:

1 is the last upper drawing roll, 2 the last lower drawing roll, 3 the scutching roller which rotates in contact with the latter, 4 the thread as it leaves the machine, 5 the suction pipe having a cross section which tapers off toward the angle enclosing the thread 4 and the roll 2 and which is indented toward the scutching roll 3, 6 the pipe branching off to the collecting duct 7, 8 the flexible rubber joint, 9 a member of the frame supporting the draft gear.

The embodiment illustrated in Figs. 1 and 2, a spring member 11 is screwed to the frame member 9 at 10. As shown in Fig. 2, this spring member is forked. Its two resilient tongues 12 are equally spaced relative to the vertical center line 13 of the frame member. The tongues 12 and the supporting section of the member 11 form a U. The lower end of the U is formed by the stop 14 and its upper end by the resilient snap catch 15 engaging the pins 16 protruding from the faces of the suction pipes 5. Between the ends 14 and 15, the U-bent member forms a pin guide which makes sure that the distance of the suction pipe from the thread 4 is sufficiently large when the suction pipe rests on the stop 14 and while it is swung down to this stop. When the suction pipe is in a position indicated by the dotted lines, the scutching roll 3 can be easily taken off. In Fig. 1 the scutching roll is supported by the pin bearings 18 which form a part of the flat springs 17 secured to the frame member. The embodiment illustrated in Figs. 3 and 4 differs from the above application mainly in that a pair of small flat springs 19 are shaped to form the pin bearings 18 for the scutching rolls 3. These flat springs 19 are attached to the suction pipes 5. Hence, the scutching roll 2 is swung into and out of working position together with the suction pipe 5. The spring members 12 are screwed to the frame member at 21, i.e. at both sides of its center web 20.

In the embodiment according to Figs. 5 and 6, the scutching roll 3 extends along the full working width of the drawing roll 2, it even covers the serrated section close to the frame member 9. This has been made possible because the pin bearings supporting the scutching roll 3 at both ends are formed by the ends of the spring tongues 40 which are passed by the ends of the suction pipes 5 and join the other spring tongues 42 at a place
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41 which is on the outside diameter of the suction pipes, the tongues 42 embracing the outer contour of these suction pipes. Since the spring tongues 40 and 42 are separated by the distance \( a \), the flat arm 43 can be rigidly secured to the face of the plug constituting the end of the suction pipe 5 by means of the two screws 44. The arm 43 carries the snap pin 16 at its free end. The snap pin engages the slot formed by the member 45 which is bent of spring wire and which incorporates snap catch, stop and pin guide constituting the object of this invention.

In the embodiment shown in Figs. 7 to 12, a flat supporting arm 22 is secured to the frame member 9 of the various draft gear units by means of the screw 20 and the pin 21. At 23, to this arm 22, the flat arm 24 is pivoted, the pivot being formed by a double-head rivet which is passed through the hole 23. At its other end, the pivoted arm 24 carries the pin 25 which fits into the bore of the plug forming the face end of the suction pipe 5. When the suction pipe 5 is tilted down in a direction as indicated by the arrow \( P \) about the flexible joint connecting the branch pipe 6 to the collecting duct, the pivoted arm 24 performs a corresponding rotative movement about the pivot 23 and the round head 26 of a screw, clamped in position in the slot 28 of the pivoted arm by means of the nut 27 and the washer 27', leaves the snap hole 29 which forms a part of the supporting arm 22. The indent which contains the snap hole is shown in Figs. 8 and 12. It is composed of the spring flaps 30 obtained by the cuts 31 made to facilitate snapping in and out of position. When the head is out of contact with the recess, the swing is limited by the shoulder 32 on the pivoted arm 24 contacting the supporting arm 22. Another stop which is independent of the supporting arm 22 can be provided as well. As may be seen by the drawing, the supporting arm 22 can be offset and shaped in any other appropriate manner to be joined to the frame member at some other suitable location when the catch bolt 26—27 is suitably adjusted in the slot 28.

We claim:

1. In a spinning machine, which includes a drawing roll and a draft gear frame, means for sucking off lint, dust and broken yarn, said means including a suction pipe arranged parallel to the drawing roll and snap catch means releasably securing said suction pipe to said draft gear frame adjacent said drawing roll, said snap catch means including a spring member so formed that portions thereof define an elongated slot, and bearing means for said suction pipe slidable in the said slot without becoming disengaged from the snap catch means.

2. The device as set forth in claim 1 wherein said spring member includes a pair of resilient tongues the extremities of which contact the bearing means for the said suction pipe.

3. The device as set forth in claim 1 wherein said spinning machine includes a stretching roll and spring means secured to said suction pipe and forming the pin bearings for said stretching roll.

4. In a spinning machine, which includes a drawing roll and a draft gear frame, means for sucking off lint, dust and broken yarn, said means including a suction pipe arranged parallel to the drawing roll and snap catch means releasably securing said suction pipe to the said draft gear frame, said snap catch means including a spring member, portions of which define an elongated slot, means pivotally mounting said suction pipe with respect to said spring member, and means secured to said suction pipe and slidable in the said slot defined by certain portions of said spring member.

5. The device as set forth in claim 4, wherein said spinning machine includes a stretching roll and spring means secured to said suction pipe and forming the pin bearings for said stretching roll.

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